

## Maximum Performance of a Team [\(View\)](#)

You are given two integers  $n$  and  $k$  and two integer arrays `speed` and `efficiency` both of length  $n$ . There are  $n$  engineers numbered from 1 to  $n$ . `speed[i]` and `efficiency[i]` represent the speed and efficiency of the  $i^{\text{th}}$  engineer respectively.

Choose **at most**  $k$  different engineers out of the  $n$  engineers to form a team with the maximum **performance**.

The performance of a team is the sum of their engineers' speeds multiplied by the minimum efficiency among their engineers.

Return *the maximum performance of this team*. Since the answer can be a huge number, return it **modulo**  $10^9 + 7$ .

### Example 1:

**Input:**  $n = 6$ , `speed` = [2,10,3,1,5,8], `efficiency` = [5,4,3,9,7,2],  $k = 2$

**Output:** 60

**Explanation:**

We have the maximum performance of the team by selecting engineer 2 (with speed=10 and efficiency=4) and engineer 5 (with speed=5 and efficiency=7). That is, performance =  $(10 + 5) * \min(4, 7) = 60$ .

### Example 2:

**Input:**  $n = 6$ , `speed` = [2,10,3,1,5,8], `efficiency` = [5,4,3,9,7,2],  $k = 3$

**Output:** 68

**Explanation:**

This is the same example as the first but  $k = 3$ . We can select engineer 1, engineer 2 and engineer 5 to get the maximum performance of the team. That is, performance =  $(2 + 10 + 5) * \min(5, 4, 7) = 68$ .

### Example 3:

**Input:**  $n = 6$ , `speed` = [2,10,3,1,5,8], `efficiency` = [5,4,3,9,7,2],  $k = 4$

**Output:** 72

**Constraints:**

- $1 \leq k \leq n \leq 10^5$
- `speed.length == n`
- `efficiency.length == n`
- $1 \leq \text{speed}[i] \leq 10^5$
- $1 \leq \text{efficiency}[i] \leq 10^8$